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Matthew Davey

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EXAMINER

KAO, JUTAI

ART UNIT

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2416

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,394	Applicant(s) DAVEY ET AL.	
	Examiner JUTAI KAO	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/29/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because Fig. 6 does not include descriptive text labels for the numbered elements. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 10-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims are directed to computer programs that are non-statutory subject matters. In addition, electrical carrier signal is also non-statutory subject matters.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5-6 use the phrases of "within the jurisdiction" and "outside the jurisdiction", the scope of the phrases is unclear; further explanations and/or amendments to the claims are requested.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 and 5-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colby (US 2005/0193114) in view of Sourani (US 6,549,515).

Colby discloses a method for directing a flow of packets based on request and server attributes including the following features.

Regarding claim 1, a method of estimating an optimum service capacity at a specified quality of service for transmission of packets of data traffic of different characteristics (see "The content-aware flow switch...calculating the buffer requirements...best-effort...burst tolerance...peak bandwidth...calculated...QoS tag is constructed...minimum bandwidth requirement and buffer requirement..." recited in paragraph [0102]), the traffic being described by a predetermined type of a descriptor to allow calculation of an estimated bandwidth requirement (BWR) for that traffic (see paragraph [0102], wherein it is the descriptor may be whether the flow is to be streamed or not to be streamed, and the QoS tag and bandwidth/buffer requirements are

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calculated accordingly), through a switch node having a buffer with a defined size (see content-aware flow switch 110 in Fig. 1b and see “buffers” recited in paragraph [0102]).

Regarding claim 8, a closed loop control system having an interconnected communication network (see network shown in Fig. 1a), comprising: user end systems for deliver and reception of data (see end stations in Fig. 1a) a switch node incorporating at least one buffer (see content aware flow switch 110 in Fig. 1b; and see “The content-aware flow switch...calculating the buffer requirements...best-effort...burst tolerance...peak bandwidth...calculated...QoS tag is constructed...minimum bandwidth requirement and buffer requirement...” recited in paragraph [0102]).

Regarding claim 9, in which the controller is directly connected to a specific end user output source to transmit data to the switch node (see Fig. 1a-c, wherein the routers, or controllers, are directly connected to the end stations and are used to transmit data to the switch).

Regarding claim 10, a computer program comprising program instructions for causing a computer to perform the method (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]) of claim 1 (see rejection of claim 1).

Regarding claim 11, a computer program comprising program instructions for causing a computer to perform the method (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]) of claim 8 (see rejection of claim 8).

Regarding claim 12, a computer program as claimed in claim 10 (see rejection of claim 10) embodied on a record medium (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]).

Regarding claim 13, a computer program as claimed in claim 10 (see rejection of claim 10) embodied on a computer memory (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080...RAM” recited in paragraph [0122]).

Regarding claim 14, a computer program as claimed in claim 10 (see rejection of claim 10) embodied on a read-only memory (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080...ROM” recited in paragraph [0122]).

Regarding claim 15, a computer program as claimed in claim 10 (see rejection of claim 10) embodied on an electrical carrier signal (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]).

Regarding claim 16, a computer program as claimed in claim 11 (see rejection of claim 11), embodied on a record medium (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]) of claim 8 (see rejection of claim 8).

Regarding claim 17, a computer program as claimed in claim 11 (see rejection of claim 11), embodied on a computer memory (see “computer program product tangibly

embodied in a machine-readable storage device for execution by a computer processor 1080...RAM” recited in paragraph [0122]).

Regarding claim 18, a computer program as claimed in claim 11 (see rejection of claim 11), embodied on a read-only memory (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080...ROM” recited in paragraph [0122]).

Regarding claim 19, a computer program as claimed in claim 11 (see rejection of claim 11), embodied on an electrical carrier signal (see “computer program product tangibly embodied in a machine-readable storage device for execution by a computer processor 1080” recited in paragraph [0122]).

Colby does not explicitly disclose the following features: regarding claim 1, configuring a service-capacity, sampling the traffic, extracting the descriptor; calculating from the descriptor the BWR for the configured service capacity; using the calculated BWR to configure a new service capacity; iteratively carrying out the sampling, the extracting, the calculating and the using until the calculated BWR and the configured service capacity coincide to provide a final service capacity; and defining the final service capacity as an optimum service capacity for the traffic at the buffer; regarding claim 5, wherein the configuring is carried out within the jurisdiction and some or all of the sampling, the extracting, the calculating, the using, the iteratively carrying, and the defining are carried out outside the jurisdiction and the method further comprises using the optimum service capacity to control the transmission of the traffic through the switch node; regarding claim 6, wherein the configuring comprises receiving a sample of the

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traffic from outside the jurisdiction and in which at least the extracting, the calculating, the using, the iteratively carrying, and the defining are carried out within the jurisdiction; regarding claim 7, wherein the switch node is remotely located with respect to where the method is carried out, except for the downloading of data to and from the switch node; regarding claim 8, means to configure a service rate; and a programmable controller having means to carry out the method of estimating the optimum service capacity in accordance with claim 1.

Sourani discloses a method for managing varying traffic loads in a telecommunication network including the following features.

Regarding claim 1, configuring a service-capacity (see “setting a start value for the network load parameter” recited in column 3, line 48), sampling the traffic (see “based on the current value of load existing in a pre-defined location of the network...” recited in column 3, lines 51-56, wherein the current value must be determined by sampling the traffic), extracting the descriptor (see “based on the current value of load existing in a pre-defined location of the network...” recited in column 3, lines 51-56, wherein the current value of the load is a traffic descriptor); calculating from the descriptor the BWR for the configured service capacity (see “calculating an updated requirement for bandwidth...” recited in column 3, lines 51-56); using the calculated BWR to configure a new service capacity (see “setting a new value for the system load” recited in column 3, lines 60-65); iteratively carrying out the sampling, the extracting, the calculating and the using until the calculated BWR and the configured service capacity coincide to provide a final service capacity (see “repeating steps (iii) to (v) until the

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chosen convergence criterion is met” recited I column 3, lines 66-67); and defining the final service capacity as an optimum service capacity for the traffic (see “repeating steps (iii) to (v) until the chosen convergence criterion is met” recited I column 3, lines 66-67 such that the resulting values meets the convergence principles and therefore is considered an optimum value for the service) at the buffer (see “buffers” in Colby as shown above).

Regarding claim 5, wherein the configuring is carried out within the jurisdiction (see “setting a start value for the network load parameter” recited in column 3, line 48, that is, within the jurisdiction of the bit allocating device 35 in Fig. 5B) and some or all of the sampling, the extracting, the calculating, the using, the iteratively carrying, and the defining are carried out outside the jurisdiction and the method further (the sampling is performed in the processor for calculating network load 31 as shown in Fig. 5B, which is outside of the jurisdiction of the bit allocating device 35 in Fig. 5B) comprises using the optimum service capacity to control the transmission of the traffic through the switch node (see “The bit adjusting mechanism allow the adjustment of the number of bits for each one the network channel” as recited in the abstract).

Regarding claim 6, wherein the configuring comprises receiving a sample of the traffic from outside the jurisdiction (see traffic received from bearer 27 in Fig. 5B, which is outside the jurisdiction of the bit allocating device 35) and in which at least the extracting, the calculating, the using, the iteratively carrying, and the defining are carried out within the jurisdiction (see Fig. 5B, wherein the bit allocating device 35 performs the defining).

Regarding claim 7, wherein the switch node (see bit deallocating device 25 and bit allocating device 35 in Fig. 5A and 5B) is remotely located with respect to where the method is carried out (remote from the processor for calculating network load 21 and 35 in Fig. 5A and 5B), except for the downloading of data to and from the switch node (the downloading is done via the channels 23/33 1-N and the bearer 27).

Regarding claim 8, the system includes means to configure a service rate (see bit allocating/deallocating device 25/35 in Fig. 5A and 5B); and a programmable controller having means to carry out the method of estimating the optimum service capacity in accordance with claim 1 (see rejection of claim 1).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Colby using features, as taught by Sourani, in order to “provide a method for improving the managing of networks under varying traffic load” in different modes (see Sourani, column 1, lines 49-53).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colby and Sourani as applied to claim 1 above, and further in view of Mukherjee (US 6,466,978).

Colby and Sourani disclose the claimed limitations as shown above.

Colby and Sourani do not disclose the following features: regarding claim 2, wherein the configuring comprises initially configuring the service capacity to match a previous optimum service capacity.

Mukherjee discloses a file system for managing network attached storage devices including the following features.

Regarding claim 2, wherein the configuring comprises initially configuring the service capacity to match a previous optimum service capacity (see "The initial bandwidth allocations are based on criteria such as prior experience" recited in column 7, lines 63-67).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Colby and Sourani using features, as taught by Mukherjee, in order to provide a reasonable initial configuration.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colby and Sourani as applied to claim 1 above, and further in view of Sahinoglu (US 2003/0235208).

Colby and Sourani disclose the claimed limitations as shown above.

Colby and Sourani do not disclose the following features: regarding claim 3, wherein the sampling comprises continuously monitoring the traffic so that if a nature of the traffic changes, a new optimum service capacity is calculated.

Sahinoglu discloses a dynamic asynchronous bandwidth allocation method including the following features.

Regarding claim 3, wherein the sampling comprises continuously monitoring the traffic so that if a nature of the traffic changes, a new optimum service capacity is calculated (see "periodic renegotiations periodically measure an average arrival rate within a given time interval to determine a new bandwidth for a next arrival" recited in paragraph [0007]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Colby and Sourani using features, as taught by Sahinoglu, in order to adjust the allocated bandwidth dynamically (see Sahinoglu paragraph [0002]).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colby and Sourani as applied to claim 1 above, and further in view of Hagen (US 2002/0075844).

Colby and Sourani disclose the claimed limitations as shown above.

Sourani also discloses the following features.

Regarding claim 4, wherein the defining comprises calculating a new optimum service capacity (see "setting a new value for the system load" recited in column 3, lines 60-65).

Colby and Sourani do not disclose the following features: regarding claim 4, wherein the defining comprises resetting a target QoS when the specified QoS changes from the QoS initially set.

Hagen discloses a method for integrating public and private network resources for optimized broadband wireless access including the following features.

Regarding claim 4, wherein the defining comprises resetting a target QoS when the specified QoS changes from the QoS initially set (see "bandwidth allocations at any given time will be changing dynamically, the base bandwidth allocations...changed by the resource provider by reconfiguring the BAM and QOS" recited in paragraph [0112]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Colby and Sourani using features, as taught by Hagen, in order to adjust the allocated bandwidth dynamically and to match the requested QoS.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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